

Amanda Charbonneau

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Research and Professional Experience

- 2011 – present **Ph.D student**, Genetics and EEBC, MSU
 Research Topic: *Determining the loci that underlie the differences between weedy R. raphanistrum and its non-weedy relatives*
- Summer 2014 & 2015 **Course Coordinator**, [Next-Gen Sequence Analysis Workshop](#)
Logistics and troubleshooting for two-week intensive learning course, in addition to teaching (see below).
- 2007 – 2011 **Research Technologist**, Biochemistry and Molecular Biology, MSU
Genomic screening of secondary metabolites in tomato trichomes from wild and cultivated species.
Genetic and biochemical characterization of genes causing qualitative differences between wild and cultivated varieties of tomato.
- 2005 – 2007 **Research Technician**, Dow Chemical Company, New Products R&D
Creation and testing of metal matrix composites materials for use as body armor and vehicle components.
- 2005 – 2005 **Researcher's Aide**, Landscape Entomology, MSU
Independent testing of pesticides
Pest consultations for privately owned land management agencies.
- 2001 – 2005 **BA Biochemistry & Criminal Justice**, Olivet College, Olivet, Michigan, 49076

Teaching & Outreach

- 2017 - present **Maintainer**, Data Carpentry Genomics Lessons
Remote and Cloud Computing
- 2017 - present **Genetics Officer**, Forum and career workshop coordinator
Organize professional events for the Genetics Program
- 2015 – present **Instructor**, [Software Carpentry](#) and [Data Carpentry](#)
Workshops taught for: [Notre Dame](#), [U of M](#), [James Madison](#), [MSU](#), [MSU](#)
- 2014 - present **Education Staff**, [Potter Park Zoo](#), Lansing, Michigan
Organize and manage individual educational special events such as birthdays and overnights

2008 – present	Docent , Potter Park Zoo , Lansing , Michigan <i>Teach the scientific method & introduce research methods for the “BIG Zoo Lesson”. Use observation of animal behavior to teach children core science principles. Train animals and animal handlers for outreach</i>
Spring 2016, 2017 & 2018	Lab Instructor , Cells and Development, MSU <i>Teach cell culture and experimental design</i>
Fall 2016 & 2017	Teaching Assistant , Histology, MSU <i>Teach microscopy and micro-anatomy. Half-time recitation appointment</i>
Summer 2016 & 2017	Instructor , Evolution, MSU <i>Develop and teach entirely online course through D2L</i>
Aug. 2012, 2013, 2014, 2015 & 2016	Instructor , Next-Gen Sequence Analysis Workshop <i>Teach a wide variety of computing topics including basic unix, bioinformatics and cloud computing</i>
2010, 2015, & 2016	Presenter , Grandparents University, MSU <i>Science of Smells and Tastes</i>
Summer 2016	Instructor , Fundamental Genetics, MSU <i>Traditional on-campus course in basic genetics</i>
Feb 2016	Instructor , Introduction to LaTeX, DIB Intermediate Bioinformatics Training <i>Develop and teach LaTeX on Overleaf, for beginners</i>
Jan 2016	Instructor , RNAseq Workshop , ICER, MSU <i>Teach single workflow to novices over two days</i>
Fall 2015 - Spring 2016	Organizer/Instructor , NGS Continuation course <i>Monthly evening session to teach practical computing to biologists</i>
Fall 2015	Teaching Assistant , Genetics, MSU <i>Half-time recitation appointment</i>
2013 – May 2015	GK-12 Fellow , Kellogg Biological Station <i>Act as a ‘visiting scientist’ in local schools helping to both teach and improve upon the science curriculum for elementary, middle and high school classrooms</i>
2013 - 2015	Judge , University Undergraduate Research and Arts Forum, MSU
Sept. 2013	Teaching Assistant , Software Carpentry short course <i>Teach a wide variety of computing topics including basic unix, programing and data management</i>

Publications

Charbonneau, A., et al. (2018) Weed evolution: Genetic differentiation among wild, weedy, and crop radish. In Review

[LaTeX tutorial](#) presented for [DIB Intermediate Bioinformatics Training](#)

Publicly available lessons for GK-12 Bioenergy Sustainability Project [[2013](#), [2013](#), [2014](#), [2015](#)]

Publicly available lessons for Next-Gen Sequencing Workshop [[2012](#), [2013](#), [2014](#), [2015](#), [2016](#)]

Invited blog post, [BEACON](#) Researchers at Work, June 2014

Schilmiller, A., **Charbonneau, A.**, Last, R. (2012) Identification of a BAHD acetyltransferase that produces protective acyl sugars in tomato trichomes. [PNAS](#), 40, 16377-16382.

Schilmiller, A., Shi, F., Kim, J., **Charbonneau, A.**, Holmes, D., Jones, A., and Last, R. (2010) Mass spectrometry screening reveals widespread diversity in trichome specialized metabolites of tomato chromosomal substitution lines. [Plant Journal](#), 62, 391-403.

Schilmiller, A., Schauvinhold, I., Larson, M., Xu, R., **Charbonneau, A.**, Schmidt, A., Wilkerson, C., Last, R., and Pichersky, E. (2009) Monoterpenes in the glandular trichomes of tomato are synthesized from a neryl diphosphate precursor rather than geranyl diphosphate. [PNAS](#), 26, 10865–10870.

Presentations

Midwest PopGen Conference, 2017	Talk: <i>Weed evolution: Genetic differentiation among wild, weedy, and crop radish</i>
Evolution Conference, 2014	Talk: <i>Evolution of Weed phenotypes in Radish</i>
BEACON Congress, 2013	Talk: <i>The Evolution of Weediness</i>
Ecological Genomics Symposium, 2012	Poster: <i>Evolution of weedy and crop phenotypes in radish</i>
BEACON Congress, 2012	Poster: <i>Evolution of crops and weeds: Loss of over-wintering phenotypes in wild radish</i>

Attended Workshops and Symposia

Feb 2016	DIB Intermediate Bioinformatics Training , Bodega Bay, CA
March 2015	Data Carpentry Genomics and Assessment Hackathon <i>Helped to create the lesson content for the Genomics workshop</i>
Jan. 2015	Software Carpentry Instructors Workshop
July 2013	18th Summer Institute in Statistical Genetics <i>Modules taken: Quantitative Genetics, Mixed Models in Quantitative Genetics, Coalescent Theory</i>
May 2012	Software Carpentry <i>Scientific computing and software design</i>

Awards

- 2013 – 2015 **Fellow** – Kellogg Biological Station GK-12
Partner with rural school teachers to help improve science lessons and learn teaching skills, two full years of financial support
- 2013 **Honorable Mention** – National Science Foundation Graduate Research Fellowship Program
- 2011 – 2012 Excellence in BioMolecular Science Fellowship – College of Natural Sciences, MSU
One year of full financial support
- 2011 ‘**Good Egg Award**’ – [Potter Park Zoo](#), Lansing Michigan
Docent of the year award for more than 400 hours of service in 2011

References

available upon request